DOCUMENT RESUME

ED 442 987 CE 080 424

TITLE Returns to Companies on an Investment in Training.
INSTITUTION National Centre for Vocational Education Research, Leabrook (Australia).
PUB DATE 2000-00-00
NOTE 10p.
AVAILABLE FROM For full text: http://www.ncver.edu.au/research/papers/downloads/roi.pdf.
PUB TYPE Reports - Descriptive (141)
EDRS PRICE EDRS Price MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS *Cost Effectiveness; Developed Nations; Educational Research; Foreign Countries; *Inplant Programs; Input Output Analysis; Investment; *Job Training; Resource Allocation; *Staff Development
IDENTIFIERS *Australia; *Return on Investment

ABSTRACT

This paper provides a summary of four projects currently funded through Australia's National Center for Vocational Education Research (NCVER), including what they propose to achieve and their preliminary findings to date. After an introduction, an overview of preliminary findings from the four projects is presented. The following barriers to gathering data and calculating return on investment (ROI) are listed: commercial secrecy and difficulty of getting firms to participate in studies; lack of data; lack of resources; turnover of people in organizations and changes in organizational structure that make it difficult to gather data and make calculations; and selection of indicators to judge the ROI in training. These preliminary conclusions are made: training seems to increase profitability; training quality and quantity and the external labor market are important variables in profitability; and training should be promoted as a part of business practices or corporate strategy. The next section presents the aim, outcomes, methodology, and preliminary findings of four NCVER research projects named "Enterprise Return on a Training Investment in the Australian Context" undertaken by the University of Melbourne (Leo Maglen, Sonnie Hopkins), UTS Research Centre for Vocational Education and Training (Rod McDonald, Janelle Moy), AustralAsia Economics (Richard Blandy), and Employment and Training Group and Deakin University (Pasquale Sgro, Chris Doucouliagos). (YLB)

Reproductions supplied by EDRS are the best that can be made
from the original document.

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL IN MICROFICHE ONLY HAS BEEN GRANTED BY
S. Hayman
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

# Returns to companies on an investment in training 2B

ED 442 987

## Introduction

Training expenditures are a unique form of business expense. Unlike other expenses, training costs represent an investment by the firm in their employees. As with any other investment, a commitment to training is directly related to the expected returns from each dollar invested.

Assessing the value of these returns has been the subject of a large body of national and international research. Almost unanimously, studies have concluded that enterprises are interested in training as a means of securing improved workplace performance and greater profitability (Moy and McDonald 1999; Office of Training and Further Education, 1998; Billett and Cooper, 1998; Baker and Wooden, 1995).

In an international study of 15 OECD countries, Coopers and Lybrand (1996) found the majority of enterprises believe that training their employees brings returns in the form of:

- Productivity improvements;
- Greater workforce flexibility;
- Savings on material and capital costs;
- A more motivated workforce; and
- Improved quality of the final product or service.

An earlier study by Carnevale and Schulz (1990) came up with the very similar findings that training typically benefits firms through:

- Increased revenue and lower unit costs resulting from increased productivity of capital and labour;
- Reduced expenses resulting from less wasted time and materials, less absenteeism and fewer accidents; and
- Difficult to measure improvements in productive culture, such as greater employee flexibility and improved employee morale.

Measuring these benefits, and relating them to the costs of training in a way that reveals the rate of return on a firm's training outlay (investment in training), is not yet widespread among Australian companies. Many firms may not be aware of the significant increase in their bottom line that could occur if they were to identify and pursue the highly profitable training opportunities that often exist within their own enterprises. As the burgeoning young internet and computer software companies increasingly show, in the future firms are often largely going to be worth simply what their employees can do.

The Office of Training and Further Education (1997) has produced a handbook that is useful for any enterprise interested in assessing the returns it is getting from its training for comparison against the returns it is getting from other investments. The National Research Evaluation Committee is currently funding four projects through the National Centre for Vocational Education Research that are developing methods for assessing returns to training for businesses (and the factors that govern these returns). A summary of what these projects are proposing to achieve and their preliminary findings to date is included in this paper.


BEST COPY AVAILABLE

CE0F0424

Some of the issues have yet to be addressed by researchers include:

- Do different enterprises adopt different training strategies as a result of differences in commitment to training or other factors?
- What are the long-run consequences of enterprise-specific training?
- How can the costs of training most appropriately be shared by enterprises employing skilled employees? In particular, what is the most effective strategy to facilitate an increase in training investment by small business?

## Overview of preliminary findings resulting from the projects being conducted at NVCER

### Barriers to gathering data and calculating ROI

All four groups of researchers have encountered problems during their research into ROI. These types of problems are probably why enterprises themselves do not routinely calculate the return on investment training.

Problems include:

- Commercial secrecy and the difficulty of getting firms to participate in studies such as this.
- Lack of data – it is hard for training personnel to get data which is elsewhere in the organisation – for instance data on profits and productivity
- Lack of resources – this type of exercise involves time commitment from the company and this is not possible given people's workloads; there are no resources devoted to training evaluation
- The turnover of people in organisations and changes in organisational structure makes it difficult to gather the data and make the calculations.
- Selecting which indicators to use to judge the return on investment in training

### Conclusions being reached

The preliminary conclusions that the researchers are finding include:

- Training seems to increase profitability – in fact the returns to the firm of an investment in training are large but firms do not realise this.
- Training quality and quantity and the external labour market are important variables in profitability.
- Training should be promoted as a part of a complex suite of business practices or as part of corporate strategy.
- Learning is the issue as it is learning rather than training which gives results.
- There are many changes within a company that contribute to performance improvements and profits – how can it be proved that training leads to performance improvement?
- The benefits that arise as a result of training/learning can be demonstrated at the individual training program/section level when outcomes of specific programs are studied.

Training can be divided into three types: training that is required by legislation, training that is essential in order for the job to be done and discretionary training – training for improvement performance. It is this last type of training that is likely to bring returns to the company.

## Summaries of NCVER research in progress at present

This section presents the aim, methodology and preliminary findings of the four research projects currently being conducted by NCVER. THese four projects are being undertaken by:

- University of Melbourne
- RCVET
- AustralAsia Economics
- Employment Training Group and Deakin University

### Enterprise return on a training investment in the Australian context (NR8011)

Leo Maglen & Sonnie Hopkins, Department of Vocational Education & Training, University of Melbourne

#### Aim

- Develop and pilot a method for demonstrating a relationship between training and productivity which:
  - includes suitable arrangements for costing training and estimating returns to training, both in unit output and in dollar terms
  - can be applied collectively by a small number of enterprises
  - is relatively simple to use and understand
  - provides suitable measures of training and productivity
  - has potential for adaptation so that it can be employed in all industry sectors
  - provides indicators that can be used by an individual enterprise to make judgments about the need for and suitability of training, both in planning and in evaluation
  - takes account of the range of factors that typically affect productivity.
- Identify issues that may deter enterprises from participating in studies using the method and ways in which their concerns might be addressed.
- Explain the conceptual and practical issues relating to measuring productivity in the various industry sectors.
- Identify factors that are particular to an industry sector or sub-sector in impacting on productivity that should be considered in application of the proposed method.
- Provide guidelines for interpreting training's impact on profits and competitiveness.
- Interpret results in the context of Australia's particular economic circumstances.
- Propose further research on the method, in particular in its application to very small businesses and primary, service and information industry sectors.

## Outcomes

- report available to ITABs, governments, providers, research bodies and other interest groups such as industry bodies;
- possible guidelines for use by enterprises to be distributed through ITABs, industry bodies and government outlets and placed on the world wide web;
- other dissemination strategies such as delivery of papers to industry and VET conferences, journal articles and possibly press releases.

## Methodology

- The researchers plan to examine a small number of medium sized enterprises in four industry areas. Those four have been chosen to include two delivering a product and two delivering a service: Textiles Clothing and Footwear, Metals Engineering, Retail and Hospitality. In collaboration with the relevant ITAB, one sub-sector per industry has been chosen for study. The sub-sectors chosen are footwear, metal products, chain-based supermarkets and four-five star hotels.
- It is proposed to investigate eight enterprises per sub-sector, given that eight is considered the minimum number that could be expected to demonstrate a relationship between investment in training and productivity, value added and other characteristics.

## Preliminary findings

Initial findings provide some support for a relationship between training expenditure and productivity, with stronger support in the two manufacturing studies than in the service based ones. It must be stressed that this claim is very tentative; some of the enterprises have been very slow in providing their figures. In the event that they are received and they accord with the emerging patterns, claims of a relationship will have better support. The following are noted:

- The apparent relationships apply between training expenditure on non-management personnel and productivity as value added, not as unit produced (tonnes of metal, number of pairs of shoes).
- A relationship is no proof of causality. And if there is causality, it could be that the level of return to productivity is what decides the amount invested in training and that the causes of the productivity return are other than training.
- In the case of wire products one enterprise goes totally against the trend as demonstrated by the other four for which figures have been received - the lowest per capita training expenditure yet the highest value added per hour of labour. The result can be explained by the interplay of three factors - informative in themselves - a) the almost negligible turnover of labour, b) the high level of qualified personnel, and c) the place of on the job training combined with attendance at TAFE to undertake modules as and when needed and on a voluntary basis.
- In the case of hotels there is some support for a relationship between earnings from room occupancies and training expenditure for Rooms Division if the two four star hotels are excluded and only the five 5 star ones are included.
- The supermarkets are outlets of two chains. During the project it became apparent that labour input is determined by formulae related to takings, so the potential for showing a relationship between them is almost nil. Added to this, training expenditure varies little within a chain, and trainees are commonly supernumeraries and seldom stay where they trained.
- Both service sub-sectors have high labour turnover, in the region of fifty percent for hotels; recruitment for skills becomes every bit as important as training in these circumstances.

- On the job training is probably the most important type of training that takes place in terms of productivity effect - without it most businesses consider they would not survive. Yet it cannot be costed because it is seldom separable from work itself. The issue then becomes not one of money spent but the effectiveness of the approach to on the job training. Further analysis of the gathered data may provide some insights into this issue.
- As far as factors that enhance the effectiveness of training on productivity, the quantitative data suggest that a low dynamic aligns with low expenditure on training and low productivity. Conversely, those enterprises that have a high dynamic train more. But it is not possible to say that the effect of training is greater where a high dynamic is in place. On the other hand, interviews found strong support for the position that survival in the long term is almost certainly predicated on doing the sorts of things dubbed a high dynamic. Consequently many of the enterprises were attempting to move towards a long term planning approach, that brings together all aspects of the business including human resources.

Finally, the project has delivered a mass of qualitative data, the analysis of which is expected to yield many useful insights beyond those reported (albeit tentatively) above. To illustrate, a paper is in preparation entitled *The Emerging Place of Creativity in Work*. It examines the extent to which the work of operatives includes the non-routine and whether they contribute to innovation. The paper draws on the project's findings. It asks whether lifelong learning for operatives means no more than that they are passive captives of the change process, continuously having to learn a new technology and letting go an acquired one, or whether they are active participants, involved in the innovative process and using their initiative in other ways. It is the expectation of the researchers that further analysis of the collected material will provide the basis for other useful contributions to the bank of knowledge based on vocational education and training research.

## Enterprise return on training investment in the Australian context (NR8012)

Rod McDonald & Janelle Moy, UTS Research Centre for Vocational Education and Training

### Aim

The aim of this project is to investigate the existence of a demonstrable relationship between enterprise returns and training investment in Australia. Its purpose is to provide research findings that will genuinely assist Australian enterprises and governments in making and evaluating training investment decisions. The research study seeks to identify what type of evidence of returns on investment in training is sought by decision-maker, establish quantitative approaches and develop, trial and assess the various approaches.

### Outcomes

At the conclusion of the project, the following items will have been produced:

- Review of issues affecting Australian returns on training research
- A practical guide to assist enterprises to plan and undertake return on training studies
- A series of enterprise case studies demonstrating how a range of enterprises have used the guide
- Final report providing project findings and recommendations for future activities.

## Methodology

The project will comprise a review of literature and 6-9 case studies of individual enterprises.

## Preliminary findings

This project was designed to conceptualise the issues and to develop and trial mechanisms that could be used by enterprises to analyse the benefits of training. As such it has not made an empirical study of the value of training. The project comprises the following steps:

**Issues Paper**

The Issues Paper prepared during the project drew attention to the issues that need to be considered by enterprises which wish to analyse the benefits of training. Issues that need particular attention are:

- "training" or "learning" – the fact that although enterprises invest in training, it is learning, skill development or attitude change that results in the returns; and these are not always associated with training
- whether traditional ways of thinking about Return on Investment are appropriate to training and learning
- links between training, performance and profits – the issue of causation.

**Working with Enterprises**

In the course of designing enterprise-based studies, the following issues emerged:

- selection of output measures
- different ways of measuring key variables such as the value of people's time

**"Training Pays"**

A guide, entitled "Training Pays", is in the final stages of preparation. The ideas in this Guide have been tested during the Case Study phase of the research, and it is intended to help enterprises analyse training returns.

# Enterprise return on a training investment in the Australian context (NR8010)

Richard Blandy, Executive Director, AustralAsia*Economics Pty Ltd

## Aim

The principal objective of this research project is to develop convincing methods by which individual enterprises can assess whether it would pay them to shift from being "low quality", low-training economic competitors to "high quality", high training economic competitors. These methods must eventually encompass human resources policies which go beyond training itself to ways of reducing turnover and enhancing organisational innovativeness and flexibility – key matters affecting whether training pays or not.

The research will assist the development of background measures and yardsticks, including international measures, that enable enterprises to assess their capability as a training organisation, the productivity and profitability payoff to enhanced training and supportive strategies in their own environment, and some idea as to how much training and allied supportive investment is required.

The research also aims to provide credible evidence to policy makers as to the long run significance for international competitiveness of enhanced enterprise returns from training, how to enhance enterprise returns from training, and what measures are likely to be most effective in shifting enterprises towards a high-quality, training-intensive competitive stance and away from a low-quality, training-shallow competitive stance.

## Outcomes

The project outputs will include:

- print-ready and electronic format copy of reports on five methodological approaches of various academic outputs such as articles, conference papers, etc
- reports showing which of the overseas research designs can be replicated successfully in Australia, together with preliminary comparisons with the original pieces of research undertaken overseas.
- proposals for expanding and modifying the approaches which have been trialed as part of this project, and which are also regarded as sufficiently promising by NCVER, to develop larger scale and/or better-focussed research designs, involving larger scale/better refined surveys and greater numbers of better-chosen case studies. The aim of this is to achieve a thoroughly convincing demonstration to Australian enterprises and Government policy makers of the circumstances, policies and practices that lead to a high return to enterprise training and, therefore, to more of it by more firms;
- proposals in the nature of cabinet submissions, jointly with appropriate Government agencies and employer groups, to persuade one or more governments to undertake a trial of a "customised education and training" strategy.
- outline reports for training providers showing what associated HRM strategies are needed if training is to be profitable and to increase productivity in firms that are potential clients.

## Methodology

The methodology to be adopted involves trialing a mix of case studies and surveys. The research will involve:

- Conducting two matched plant studies in Melbourne and Perth and one matched plant study in Adelaide and Darwin, ie six pairs of firms will be undertaken.
- Trialing and evaluating the employer survey undertaken for the US Employment Opportunity Pilot Project by the NIE and the NCRVE. At this stage, a suitable sample of 40 firms, 10 from each city (Adelaide, Perth, Melbourne and Darwin), is regarded as adequate for the purpose of a trial.
- Using the research designs pursued by the Centre for Economic Performance at the LSE. A sample of further 40 firms, 10 from each city, to explore the value of the CEP's approach to meeting the project's objectives will be undertaken.
- Identifying Australian firms that undertake a great deal of training and that believe it pays and exploring why they think it pays, whether those beliefs can be substantiated

## Preliminary findings

1. Australian firms provide extensive training for their incoming employees. About half of the time of incoming employees is taken up with training over the first three months of their employment, compared with about a third of the time of incoming employees in American firms. The main sources of this difference are the greater hours spent in Australia on formal training off-the-job and on informal training provided on-the-job by co-workers.

2. This result is associated with Australian workers paying more for their training (through accepting lower starting wages) than happens in America, and with employers gaining productivity increases from this training (not offset by employees' wage increases) of about two thirds of those in America. In fact, nearly all the productivity gains from incoming employees' training were captured by firms in Australia, compared with about half of the productivity gains in America.

3. Hours (quantity) of training given by Australian firms are directly related to product-market uncertainty and unpredictability, and to other forms of capital investment in innovation, physical capital and R&D. Quantity of training is also inversely related to involuntary labour turnover. Types (quality) of training given by Australian firms are directly related to the presence of internal labour markets in firms, as well as to other forms of capital investment by firms and competitive product market conditions.

4. The profitability of firms is directly related to the quantity and quality of training provided by them and is also reflected in firms' paying above market wage rates and in difficulties in their finding suitable employees.

5. The results reported in the two preceding paragraphs appear to be largely consistent with British results using the same survey instrument.

6. By contrast, preliminary results from a study of matched hotels, unlike results from the work of Prais on matched hotels at the National Institute in Britain, revealed little influence of training practices or VET qualifications on productivity levels in the hotels studied. Commitment to training in the majority of three star hotels studied was poor, and reactive rather than proactive. However, these results may have been confounded by an inability to maintain a constant star rating across the sample of hotels investigated.

7. In-depth case studies of firms show that enterprise returns to training can be exceptionally high, especially for training that is highly specific, rapidly accomplished, and related to the introduction of new technology or working patterns. Such training pays a firm, even if labour turnover is high.

8. Customised (tailor-made) training programs for prospective employees of newly-attracted enterprises, often offered as a location inducement by governments, have been successful overseas in attracting footloose firms because such training programs impact strongly on firms' early profitability in their new location.

## Summing up

The study is suggestive of a positive impact by training on the productivity and profitability of firms in Australia.

The surveys undertaken in the course of the study need to be replicated with larger samples if the statistical evidence for these important propositions is to be made thoroughly convincing.

# Enterprise Return on a Training Investment in the Australian Context (NR8021)

Pasquale Sgro & Chris Doucouliagos, Employment and Training Group

## Aim

There are four principal objectives of the project.

- To compile data on the impact of training on enterprise productivity and profits.
- To apply a range of statistical techniques to the data on training initiative and outcomes in order to identify the impact of training initiatives on enterprise performance in general, and on productivity and profits in particular.
- To identify the key evidence required by enterprises in order to warrant the maintenance, or an increase, in their training investment.
- To develop an evaluation instrument for use by enterprises to assist them to make the most appropriate training investment decisions.

## Outcomes

In addition to the preparation of a research report, the outcomes/products of the research will include

- three print ready bulletins for dissemination to industry and training bodies
- fine print ready working paper for NCVER and The Project Reference Group
- a public seminar on the project at its completion

## Methodology

Using the following techniques to investigate the impact of training in a range of case study enterprises:

- Pre and post training analysis
- Cost benefit analysis
- Analysis of the impact of training of efficiency and productivity

## Preliminary findings

Strong links are established between training and improvements in performance. These are both statistically significant and of economic significance. The results show clearly that the rates of return to training are very large, with many generating returns in excess of a thousand percent per training program. That is, in a number of cases, for *each* dollar invested, the organisation experienced a net gain of over 10 dollars. These rates of return to training compare favourably with returns from other forms of investment. The returns to training are not industry specific.

While in most cases all of the relevant costs associated with training can be identified, only some of the benefits from training can be quantified. That is, the calculated rates of return to training tend to be lower bound estimates – with the real rates of return likely to be significantly higher.